

FIG. 1

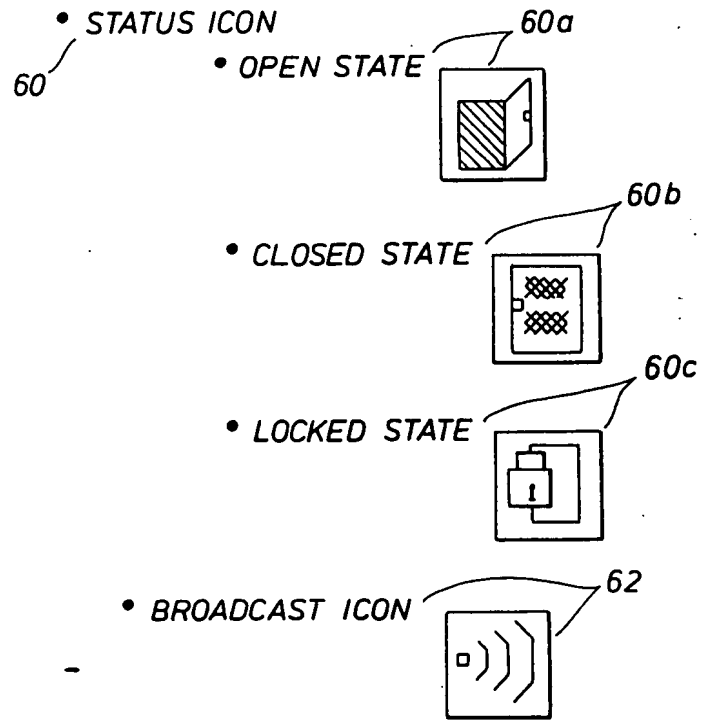
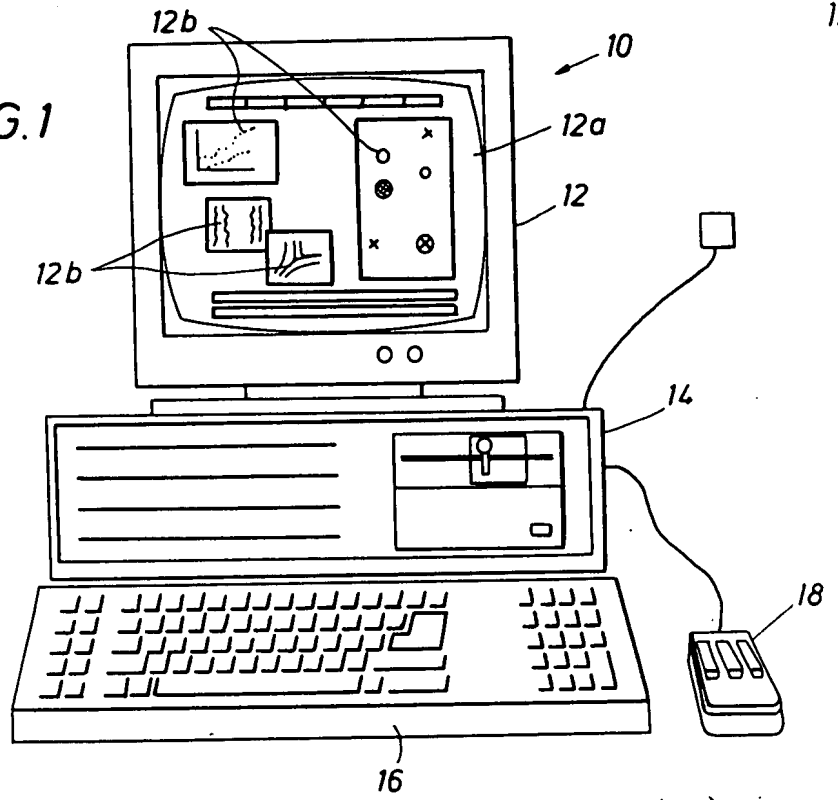
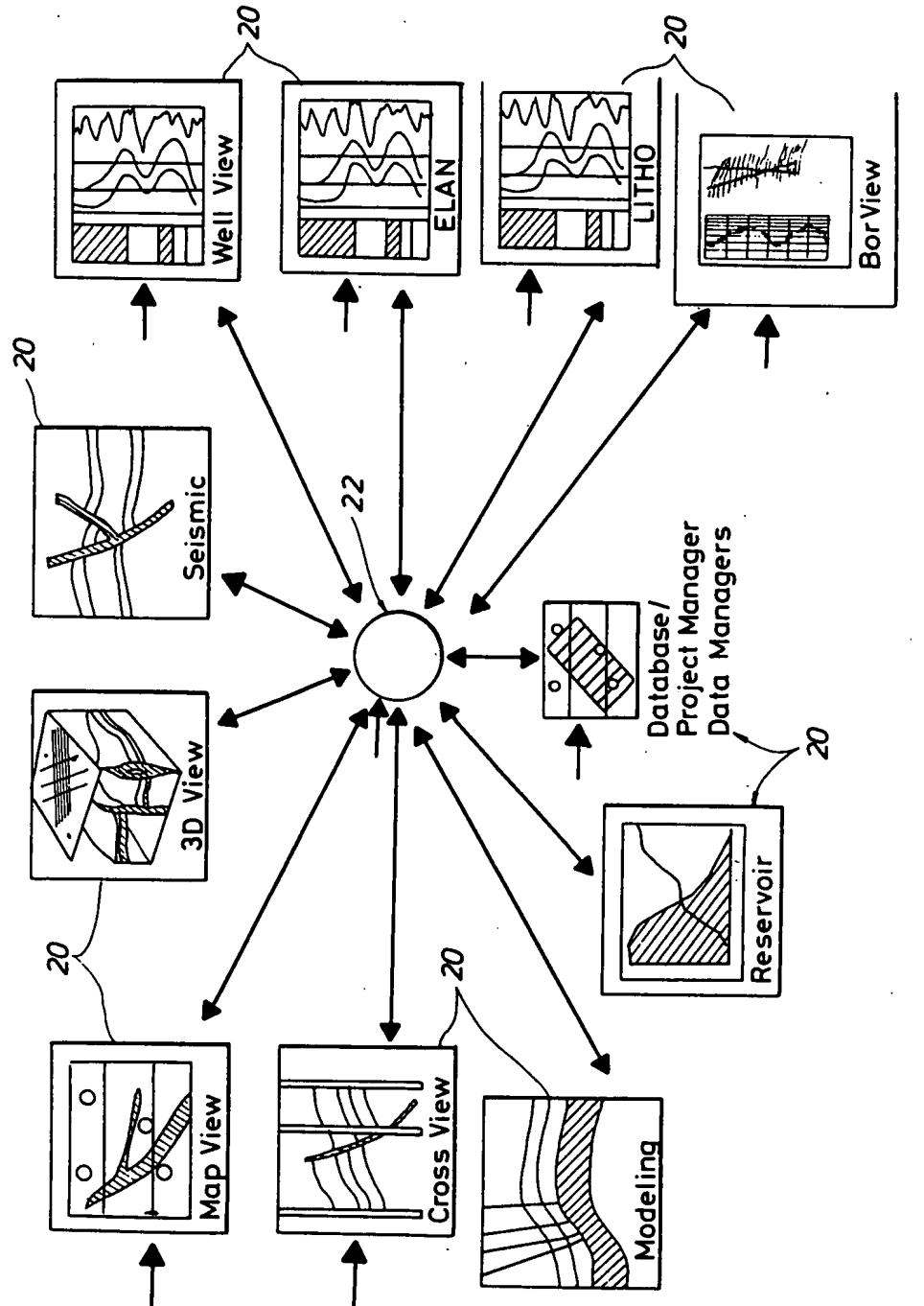


FIG. 14

FIG. 2 2/24



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FIG. 3

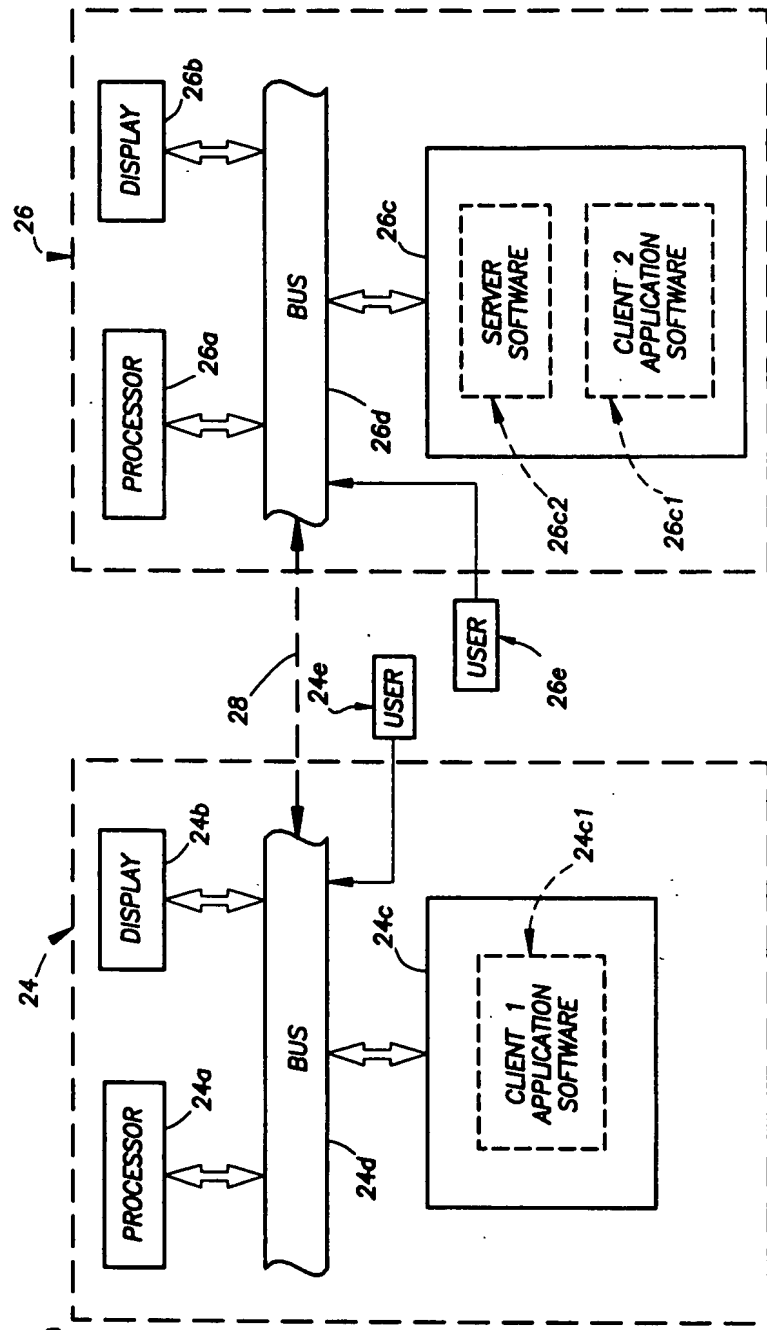


FIG. 8A

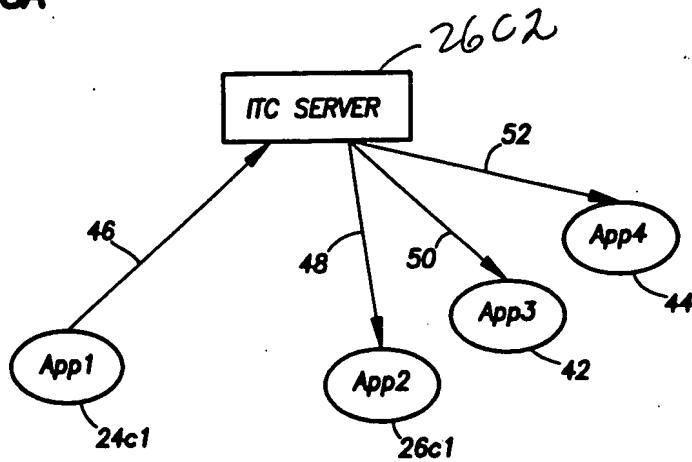
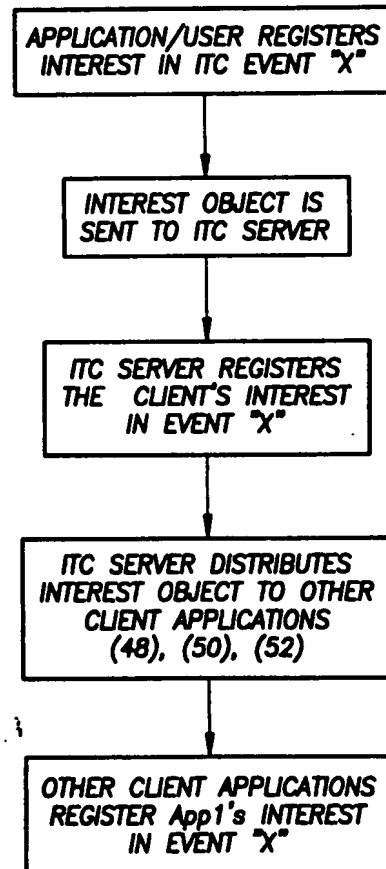


FIG. 8B



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FIG.9A

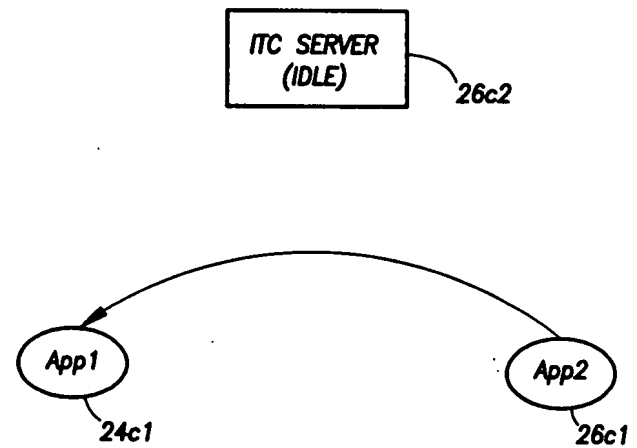
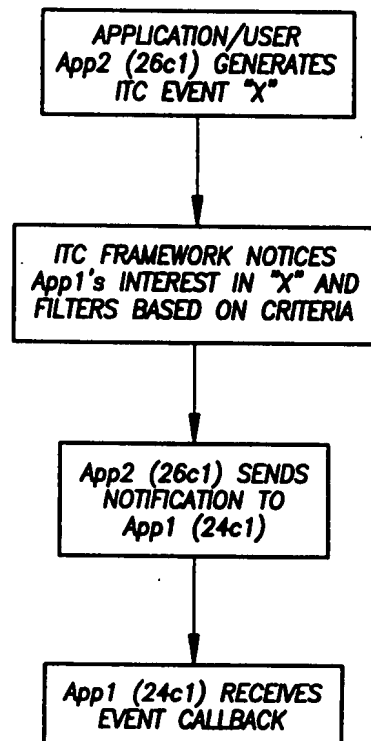


FIG.9B



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FIG. 10A

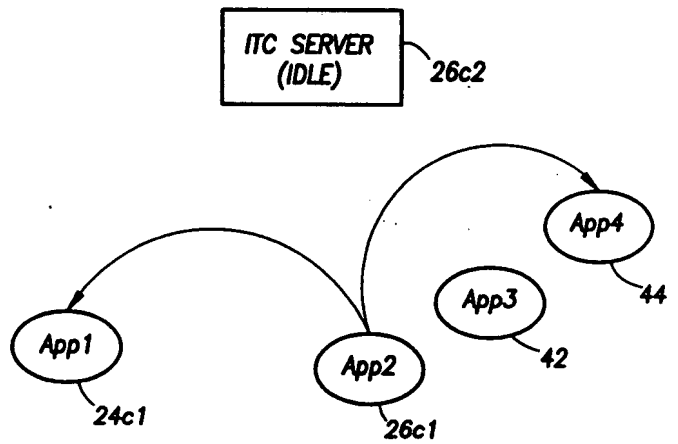


FIG. 10B

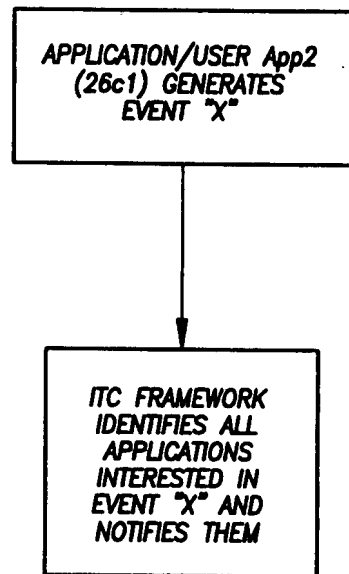


FIG. 11A

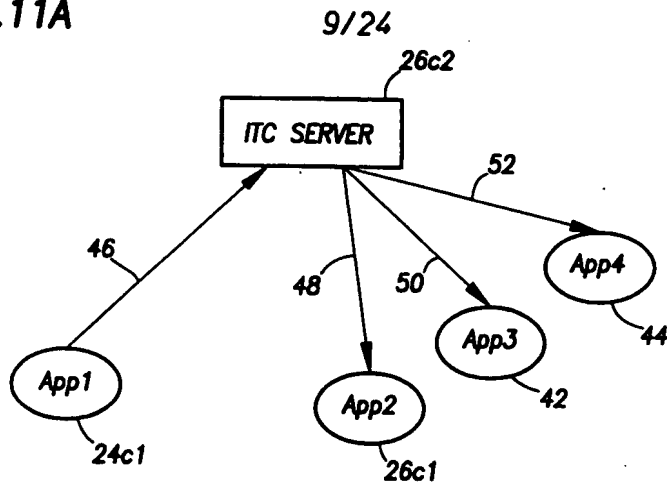


FIG. 11B

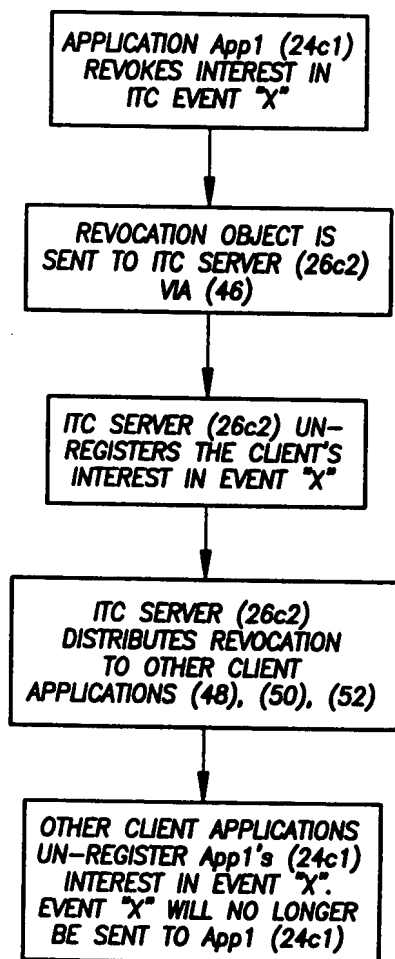


FIG. 12A

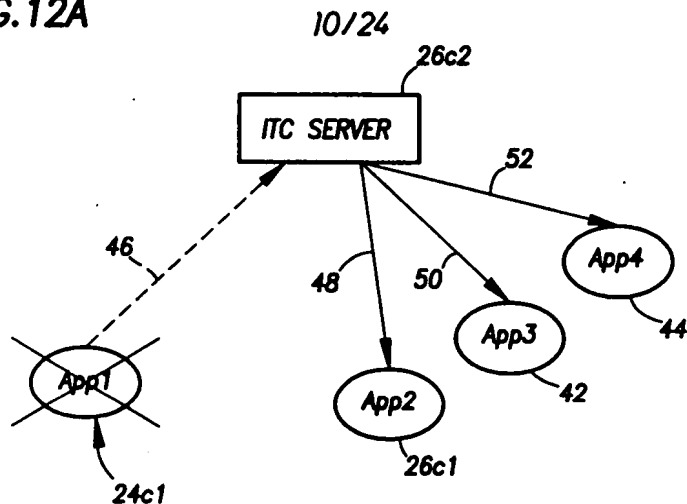
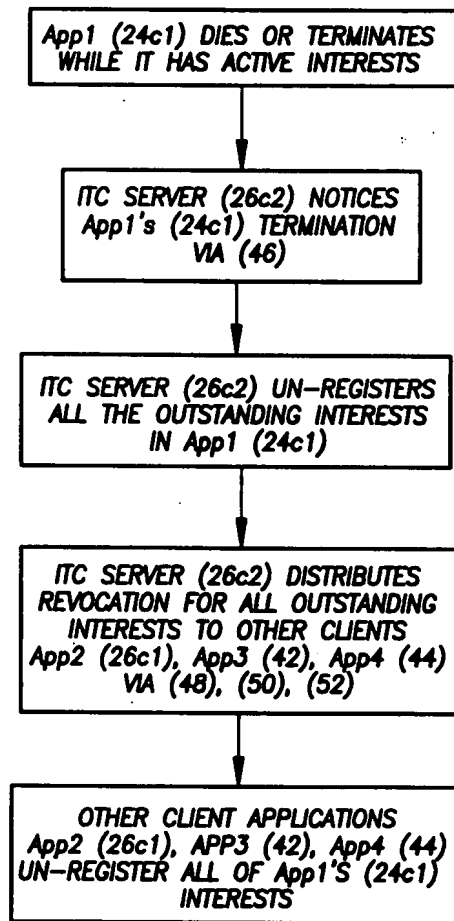


FIG. 12B



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FIG.13A

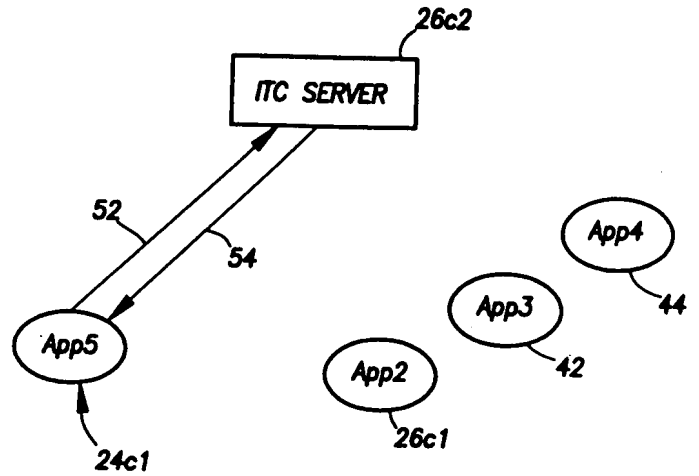
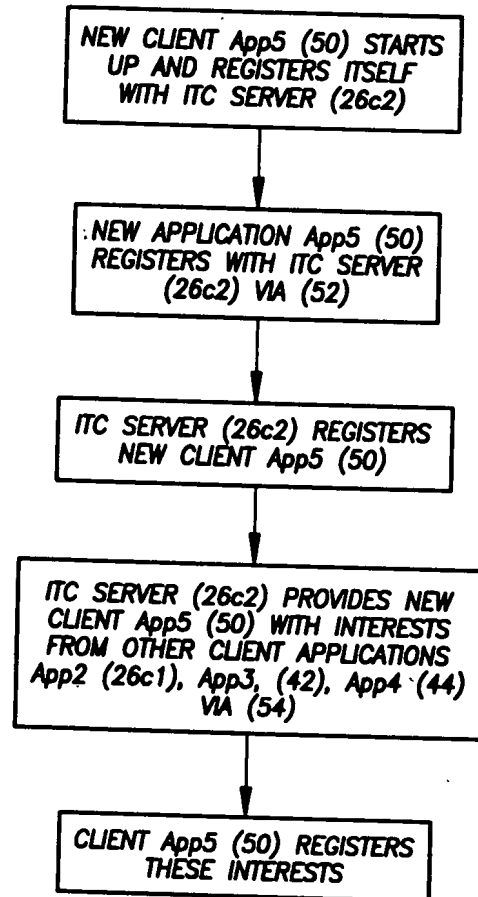


FIG.13B



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FIG. 13A

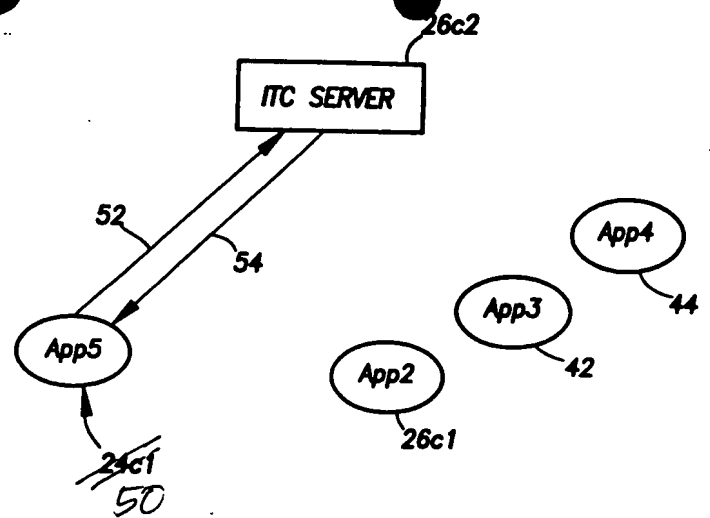
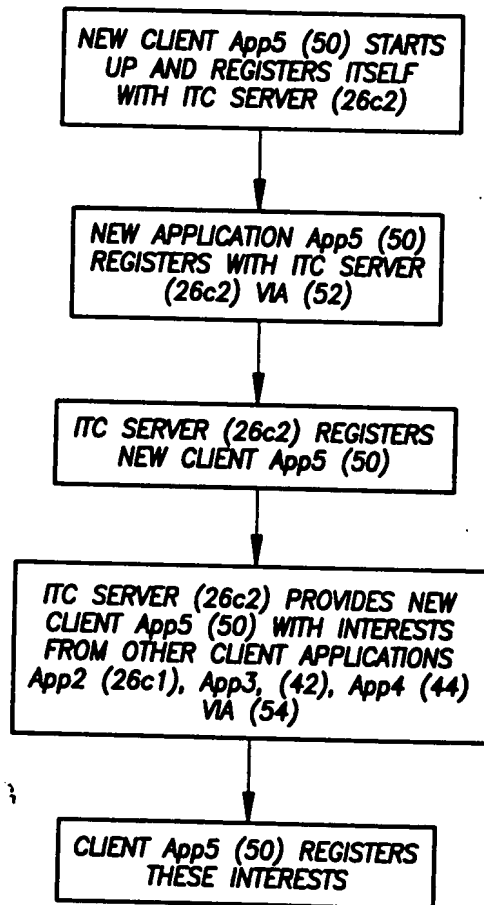


FIG. 13B



6670 6670 6670

• EVENT FILTER 64

FIG. 15A

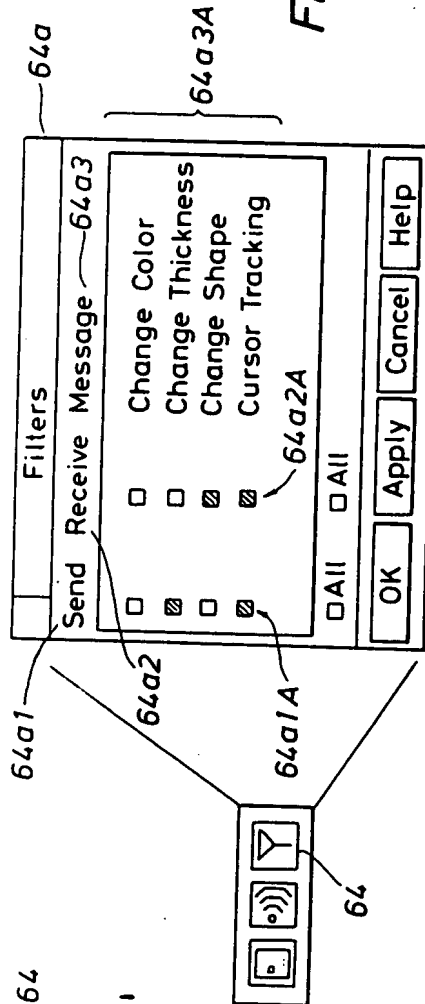


FIG. 15C

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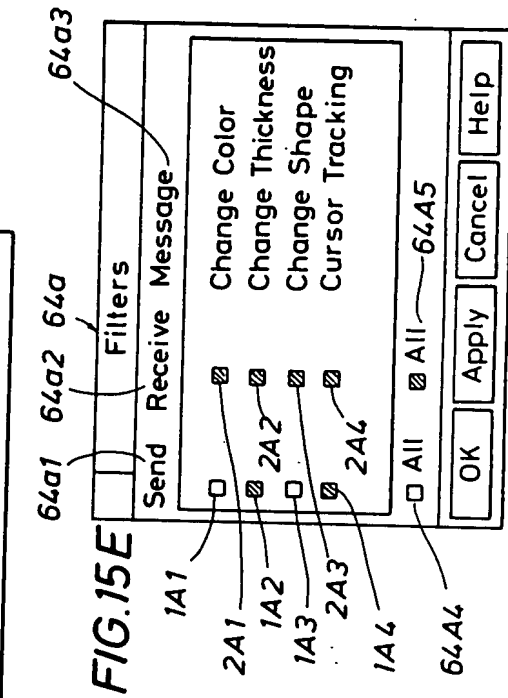


FIG. 15E

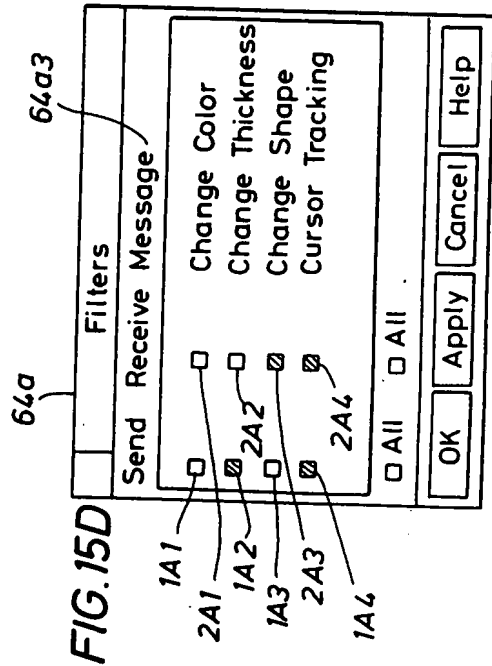
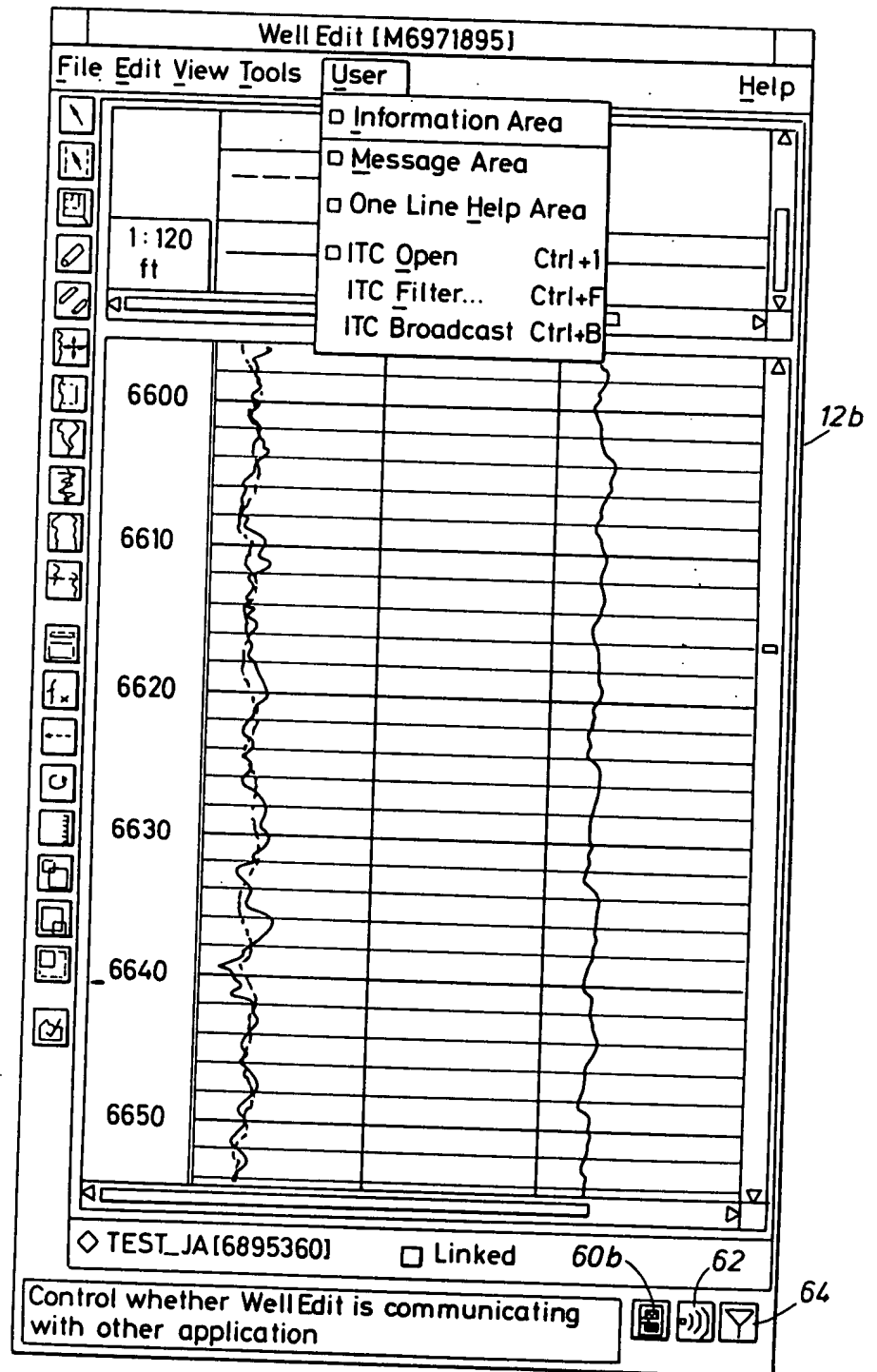


FIG. 15D

FIG. 16

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14/24

FIG. 17

Array Selection

Query from Well Sketch [M2752679]

Array Code C*

Arrays

☐ Code

☐ Modifier

☐ Start

☐ Stop

☐ Service

☐ Run

☐ Description

CALI	DITE	3949.5 ft	3900 ft	DITE	.011	Caliper
CCSW	DITE	3949.5 ft	3900 ft	DITE	.011	Composite CCS/CTS Telemetr.
CFTC	DITE	3949.5 ft	3900 ft	DITE	.011	Corrected Far Thermal Counts
CILD	DITE	3949.5 ft	3900 ft	DITE	.011	Calibrated Induction Deep...
CILM	DITE	3949.5 ft	3900 ft	DITE	.011	Calibrated Induction Medium...
CNTC	DITE	3949.5 ft	3900 ft	DITE	.011	Corrected Near Thermal Counts
CS	DITE	3949.5 ft	3900 ft	DITE	.011	Cable Speed
CSFA	DITE	3949.5 ft	3900 ft	DITE	.011	SFL Conductivity (Averaged)
CSFL	DITE	3949.5 ft	3900 ft	DITE	.011	SFL Conductivity

Selection CILM.DITE .011.DITE [A2468008]

☒ Open/Close ITC Connection

60b

12b

60b

62

15/24

FIG. 18

12b

WellSketch Borehole Selection

Query from

Boreholes

UWI	Status	Driller Depth	Logger Depth
CASTILLA 9	active		
CASTILLA 9 @ WILDCAT			
NORTH TEXAS	proposed	4000 ft	3950 ft

Selection

☒ Broadcast current selection

FIG. 19

12b

60a 62

Collection Editor --- User Collection [C2534232]

Name

Code

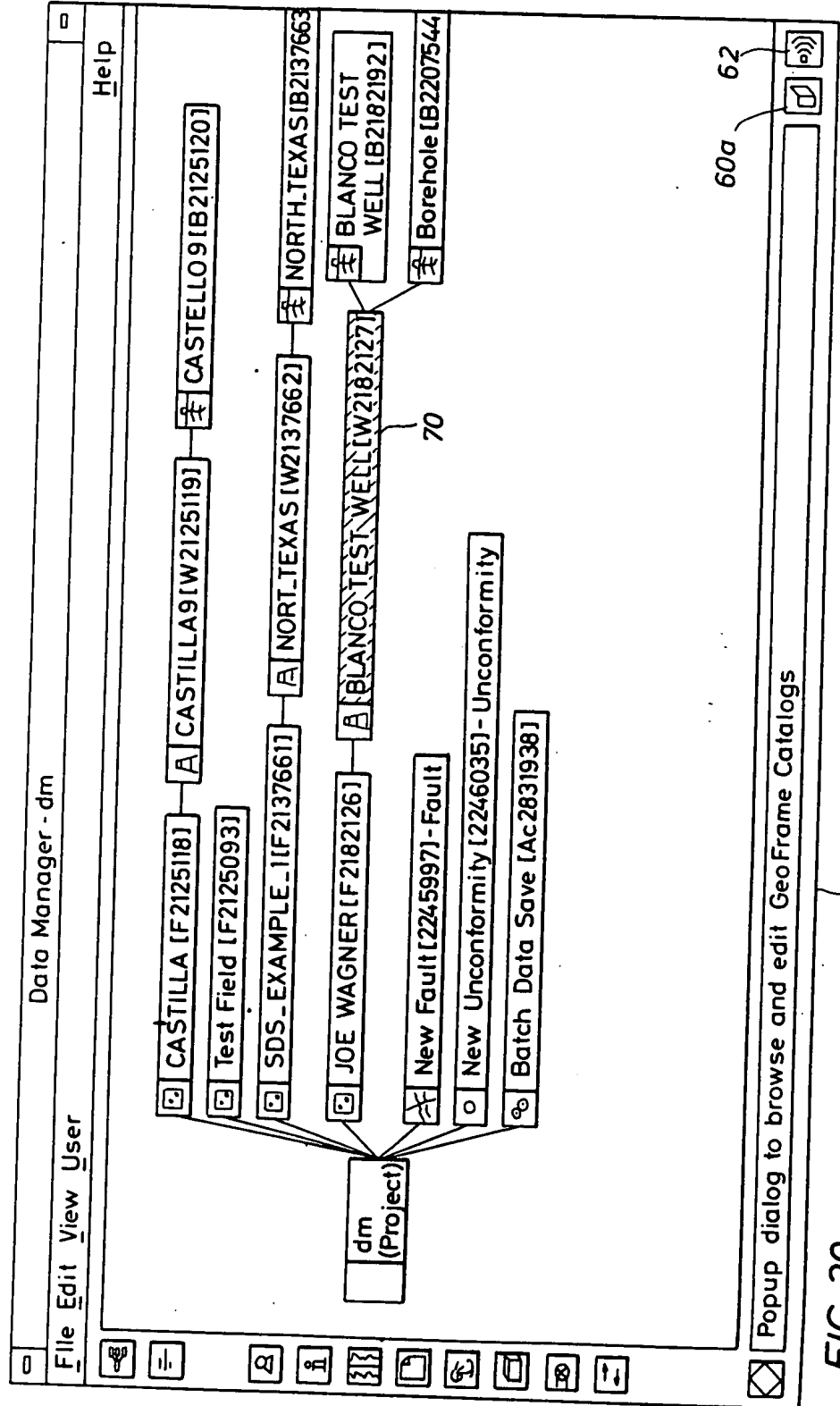
Elements

Type	Element
P	WS_GPD_L_FILE [P2752715] wu_wellsketch/wellsketch
P	GPD_L_SUMMARY_DI[P2752717] # NULL
	NORTH_TEXAS [B2467872]
	Borehole_Equipment [2476970]
	WellSketch_widmer [Ac2752677]
	TENS.DITE __.011.DITE [A2467090]

Remarks

☒ Pops up the Application Manager

657749 2003260



Sheet 2000000

Well Editor -- BLANCO TEST WELL [W2182127]										72
Name	BLANCO TEST WELL	Spud Date	NULL	API	NULL					
Company	NULL	UWI	BLANCO TEST WELL	Region...						
Surface Location										
Projection	[tys [2124963]-Albers Equal-Area Conic]	X(ft)	NULL	Y(ft)	NULL					
Status										
Well Status	Absent	H2S Flag	Absent							
Boreholes										
<div> <div> BLANCO TEST WELL [B21821921] Borehole [B2207544] </div> <div> Create Edit... Delete... </div> </div>										
Remarks										
<div> <div> State/Country Code State NULL Country </div> <div> General Attribute Editor... </div> </div>										
<div> <div> OK Apply Reset </div> <div> Cancel Help </div> </div>										
<div> <div> Create a New Object in the DataBase </div> <div> 60a 62 </div> </div>										

FIG. 21

FIG. 22

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12b3

Field Editor... JOE WAGNER [F2182126]

Name

Wells

Type	Name	UWI	Well Status
A	BLANCO TESTWELL	[W2182127]	BLANCO TESTWELL

Remarks

☒ Any type of remarks added to an entity instance

FIG. 23

12b4

60c

62

Attribute Editor

Name

Type

Attributes...

API Country Code	<input type="text"/>
Code	<input type="text" value="Well"/>
Create Date	<input type="text" value="Jul 29 14:24 1996"/>
Field Name	<input type="text"/>
Name	<input type="text" value="BLANCO TEST WELL"/>
Project	<input type="text" value="dm (Project)"/>
Source	<input type="text" value="DLIS_Load"/>
UWI	<input type="text" value="BLANCO TEST WELL"/>

☒ Save Changes in DataBase and Close the Window

FIG. 24

12b5

Field Editor... JOE WAGNER(F2182126)

Name **JOE WAGNER**

Wells

Type	Name	UWI	Well Status
	BLANCO TEST WELL (W2182127)		BLANCO TEST WELL

Remarks
This is a Test Field

General Attribute Editor...

OK Apply Reset Cancel Help

☒ Any type of remarks added to an entity instance

76 60c 62

FIG. 25

12b6

GeoFrame Application Manager

Schlumberger GeoQuest

Project **dm** Activity **None**

Products

GEOLOGY	PETROPHYSICS	RESERVOIR
VISUALIZATION	SEISMIC	UTILITY

Managers

PROJECT	PROCESS	DATA
---------	---------	------

Exit Help

View GeoFrame process messages

78 78

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20/24

FIG.26

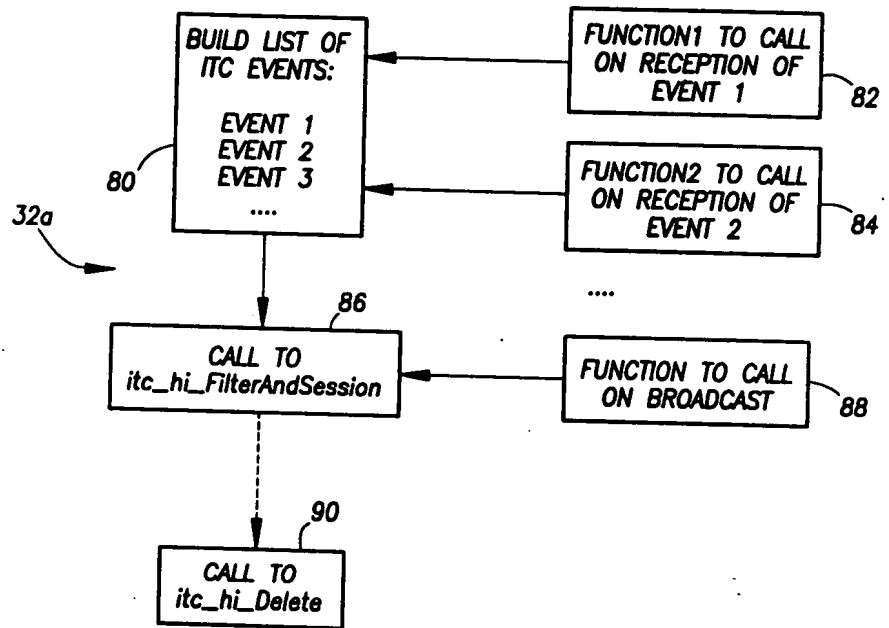


FIG.26A

BUILD LIST OF ITC EVENTS	
EVENT 1	INTEREST OBJECT 1
EVENT 2	INTEREST OBJECT 2
EVENT 3	INTEREST OBJECT 3
⋮	⋮
EVENT N	INTEREST OBJECT N

80a points to the first column (EVENT 1, EVENT 2, EVENT 3, ⋮, EVENT N). 80b points to the second column (INTEREST OBJECT 1, INTEREST OBJECT 2, INTEREST OBJECT 3, ⋮, INTEREST OBJECT N). 80 points to the table header.

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FIG.27

```

#include <wk_itc_hi/itc_hi_public.h>
#include <wk_itc_hi/itc_hi_synonym.h>
#include <wk_itc_data/itc_diselection.h>
...
void
udm_SingleDIEditor::PopulateEventList(void)
{
    itc_hi_EventInfo_t Event;

    /* Initialize the filter info list */
    Event =
320 (itc_hi_EventInfo_t)utl_CallocBlock(sizeof(itc_hi_EventInfo_st));

    Event->EventToken      = qITC_DISELECTION;
    Event->EventHName      = qDISELECTION;
    Event->SendToggleState = ITC_ON;
    Event->ReceiveToggleState = ITC_ON;
    Event->ReceiveEventCB = ReceiveDISelection_cb;
    Event->ReceiveEventCBData = (vt_Datum_t) this;

    EventList = (itc_hi_EventInfo_t)vt_CreateList(vt_DatumL_vt, 1);
    vt_AddToList((itc_hi_EventInfo_t)EventList, (vt_Datum_t)Event);
}

void
udm_SingleDIEditor::SetupITC(void)
{
    itc_Status_t MyStat;
    ...
    //Populate the eventlist
    PopulateEventList();

    //Set ITC HI for this SubModule Run
    ITCBanner = itc_hi_FilterAndSession(
        SubModuleRun,
        ITCForm,
        OneLineHelp,
        EventList,
        ITC_CLOSED,
        BroadcastDISelection_cb,
        (XtPointer) this,
        &MyStat);

    ...
    //Free Event List and elements
    itc_hi_EventInfo_t Event = (itc_hi_EventInfo_t) vt_Nth(EventList, 0);
    if(Event)
        utl_FreeBlock(Event);
    vt_DeleteList(EventList);
    EventList = NULL;
    ....
}

```

FIG.28

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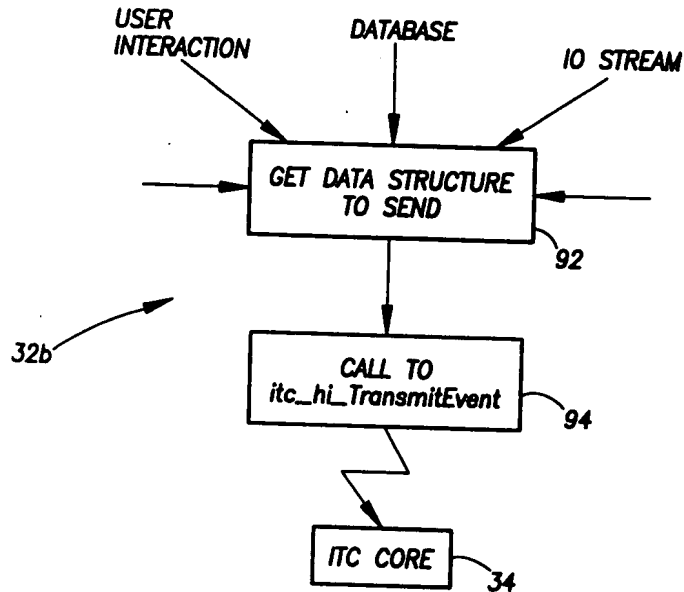


FIG.29

```

#include <wk_itc_hi/itc_hi_public.h>
...
void
udm_ObjectListInfo::SendSubDI(void)
{
    itc_Status_t ITCStat;
    aqi_DataItem_t DisToSend = GetSelection();
    itc_hi_t Banner = NULL;

    if (!DisToSend)
        DisToSend = (aqi_DataItem_t)vt_CreateList(vt_DatumL_vt, 2);
    DisToSend = (aqi_DataItem_t)vt_AddToList((vt_DatumL_t)DisToSend,
        (vt_Datum_t)DataItem);

    Banner = Manager->GetITCBanner();

    if (Banner && DisToSend)
    {
        itc_hi_TransmitEvent(
            Banner,
            EventHiName,
            (vt_Datum_t)DisToSend,
            &ITCStat);
        vt_DeleteList(DisToSend);
    }
}
  
```

The code block shows a C++ function `udm_ObjectListInfo::SendSubDI(void)`. It includes a header `<wk_itc_hi/itc_hi_public.h>`. The function declares `itc_Status_t ITCStat`, `aqi_DataItem_t DisToSend`, and `itc_hi_t Banner`. It checks if `DisToSend` is null and creates a list if so. It then adds a `DataItem` to the list. It gets a `Banner` from the `Manager`. If both `Banner` and `DisToSend` are non-null, it calls `itc_hi_TransmitEvent` with `Banner`, `EventHiName`, `(vt_Datum_t)DisToSend`, and `&ITCStat`. Finally, it deletes the list `DisToSend`.

FIG.30

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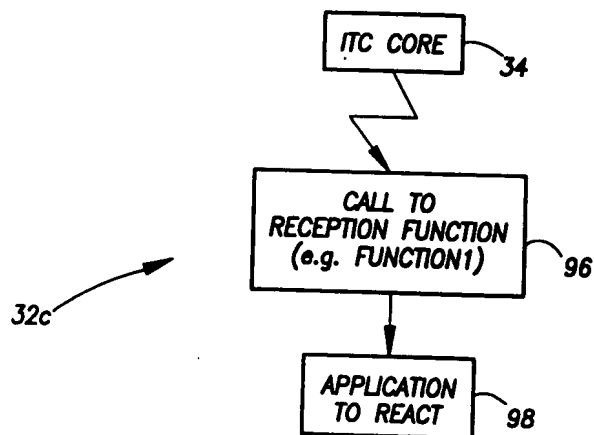


FIG.31

```

void
udm_WellDataManager::CheckAndReact (aqi_Data_ItemL_t SelectDataItems)
{
    Int32_t Count = vt_LengthList(SelectedDataItems);
    for(int i = 0; i < Count; i++)
    {
        aqi_DataItem_t DI = (aqi_DataItem_t)vt_Nth(SelectedDataItems, i);
        DIType = gdm_GetDIType(DI);

        // I do nothing if I receive "myself"
        if(DI != DataItem)
        {
            if(DIType == qWell)
            {
                SwitchDataItem(DI);
                break;
            }
            if(DIType == qBorehole)
            {
                vt_DatumL_t ObjList = GetSubList();
                if(ObjList)
                {
                    Int32_t Count2 = vt_LengthList(ObjList);
                    for(int j = 0; j < Count2; j++)
                    {
                        udm_ObjectListInfo *Elt =
                            (udm_ObjectListInfo*)vt_Nth(ObjList, j);
                        Elt->Select(DI);
                    }
                    break;
                }
            }
        }
    }
}
  
```

The code block shows a C++ function `udm_WellDataManager::CheckAndReact` that takes `aqi_Data_ItemL_t SelectDataItems` as an argument. It iterates through a list of data items. For each item, it checks if it is the same as the current data item. If not, it checks the data item type. If it is a well, it switches the data item and breaks the loop. If it is a borehole, it gets a sub-list of objects and iterates through them, selecting each one with the current data item. The code is annotated with a '32c' label pointing to the start of the loop.

601 600 600 600

FIG.32

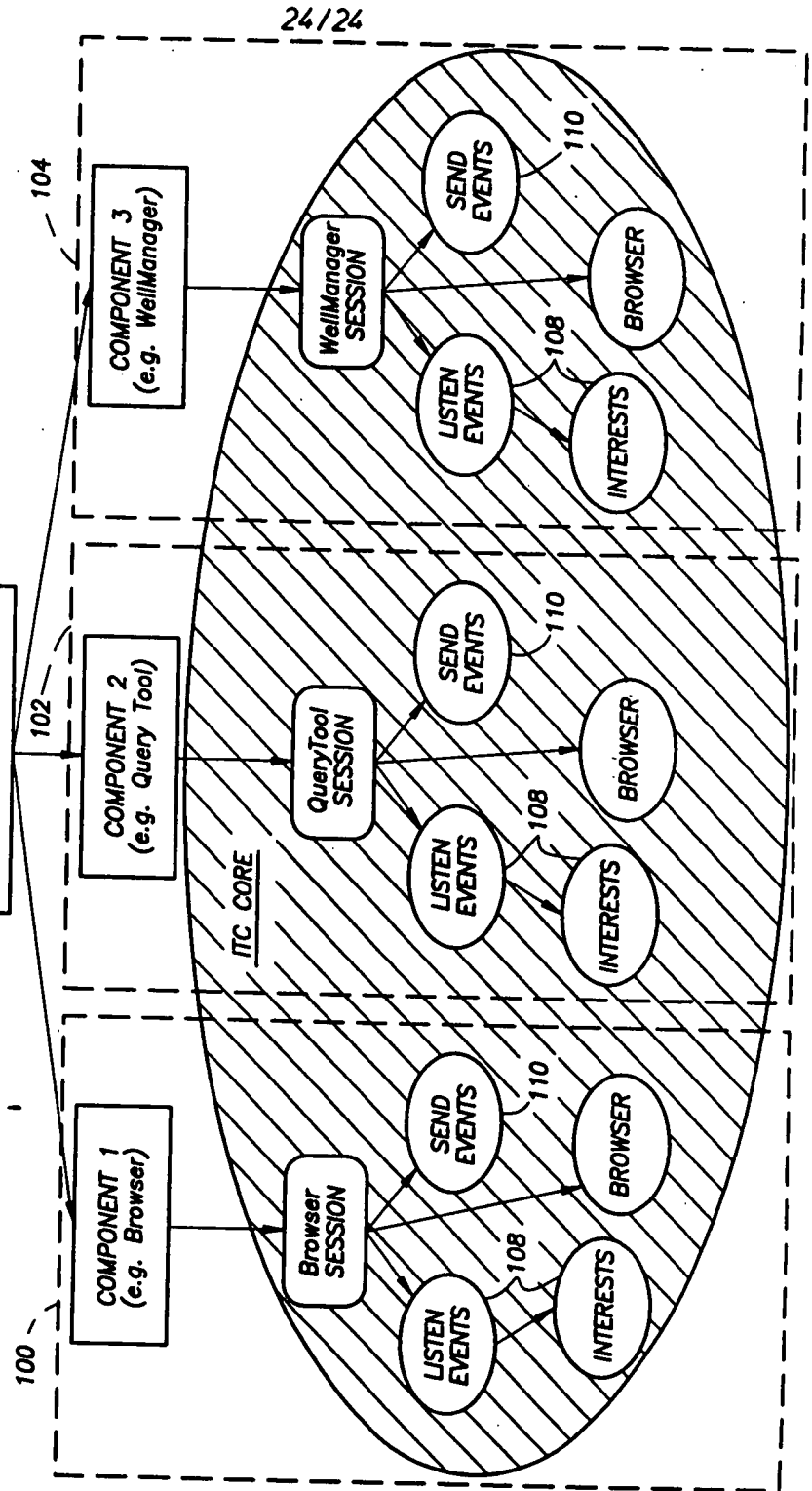


FIG. 1

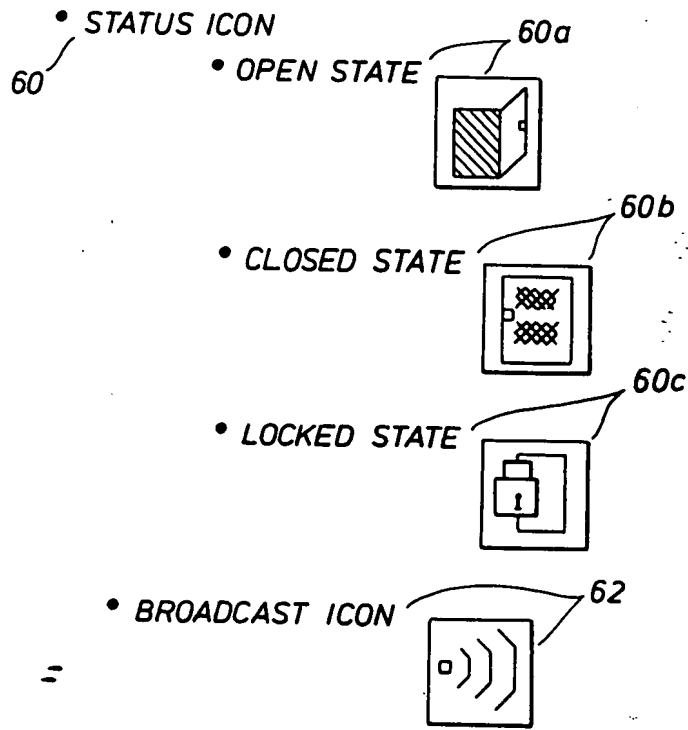
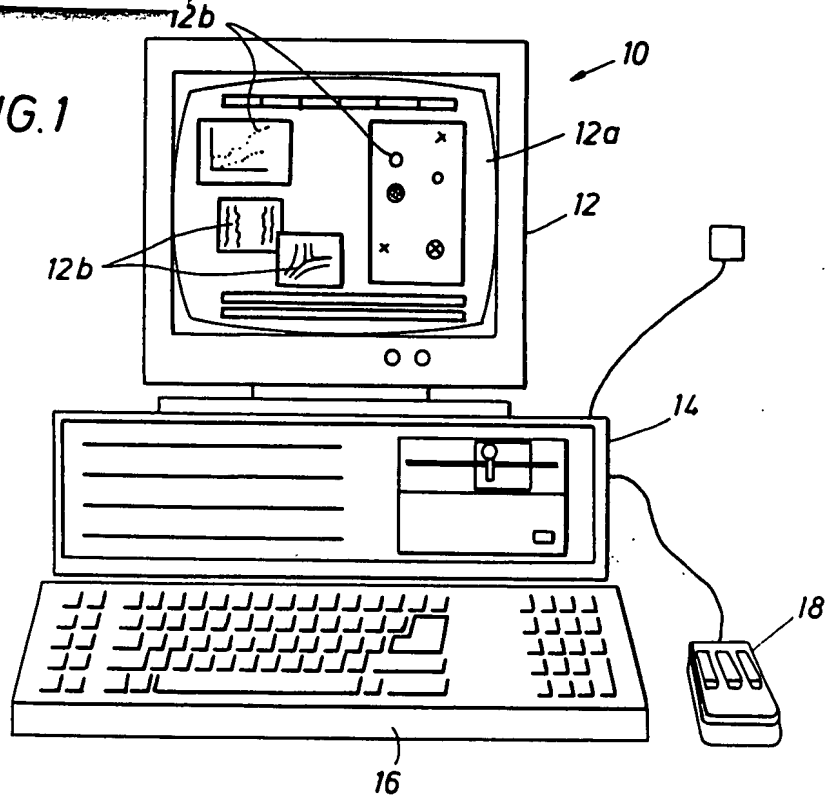
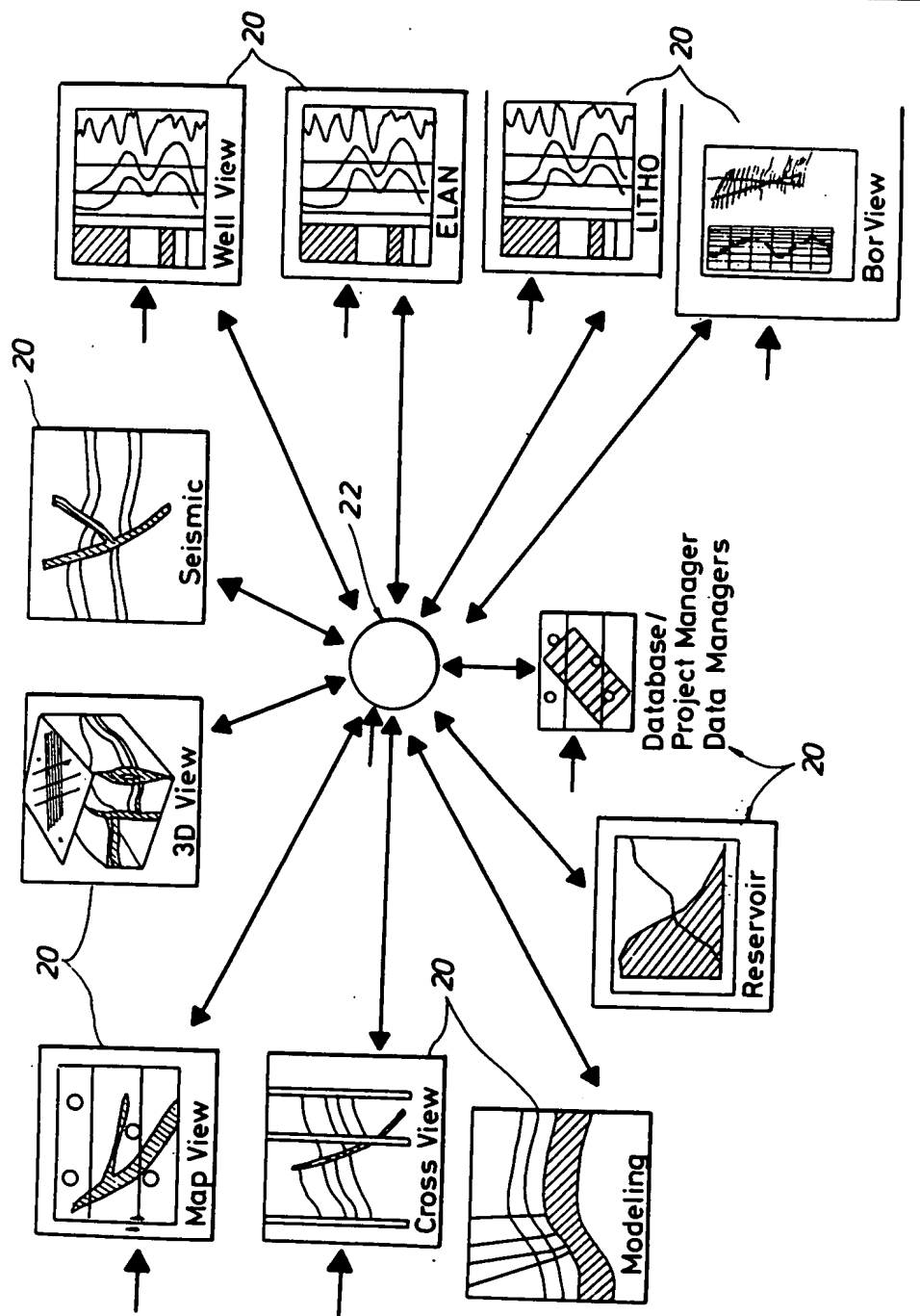


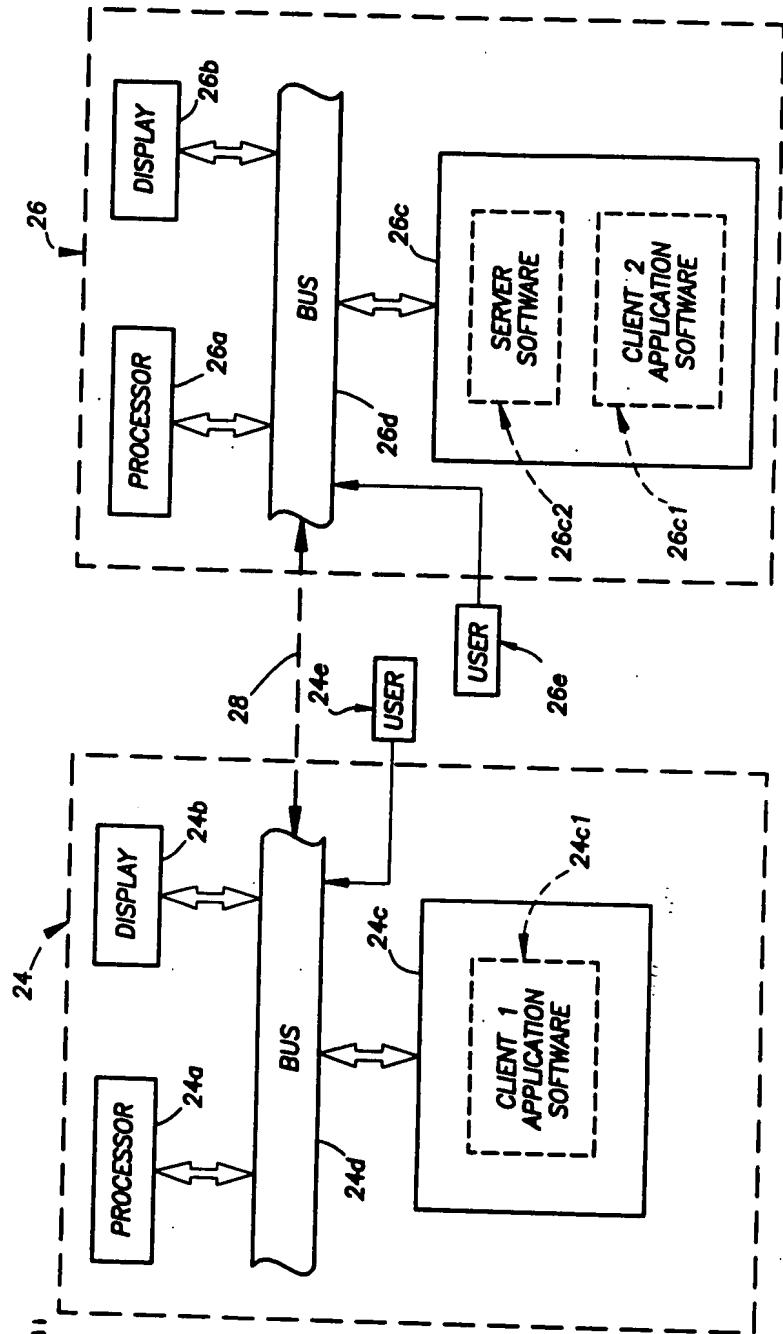
FIG. 14

FIG. 2 2/24



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FIG. 3



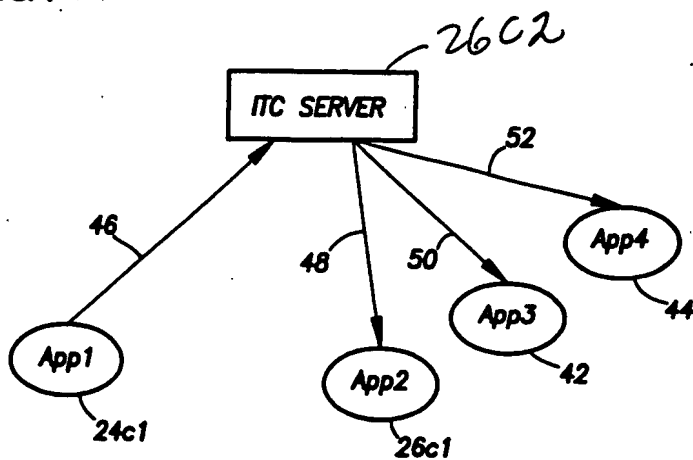
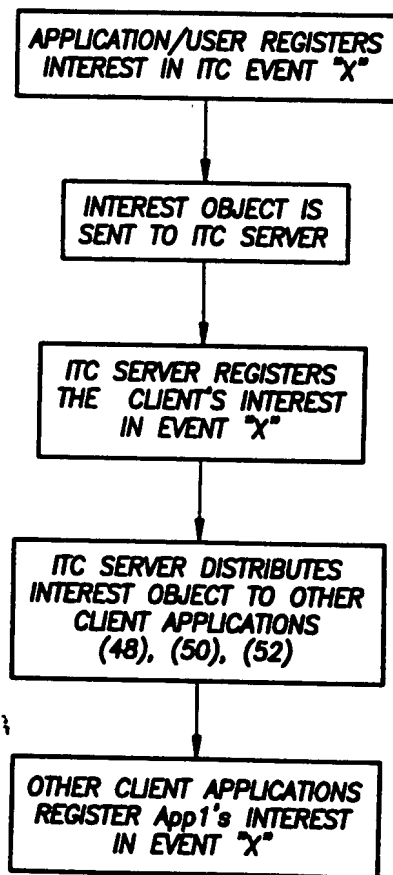


FIG.8B



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FIG.9A

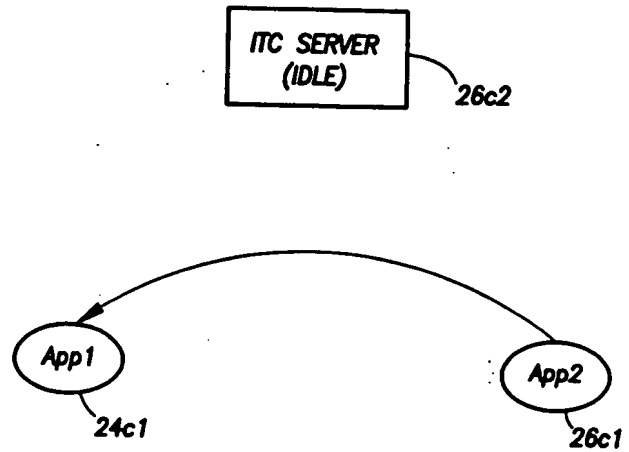
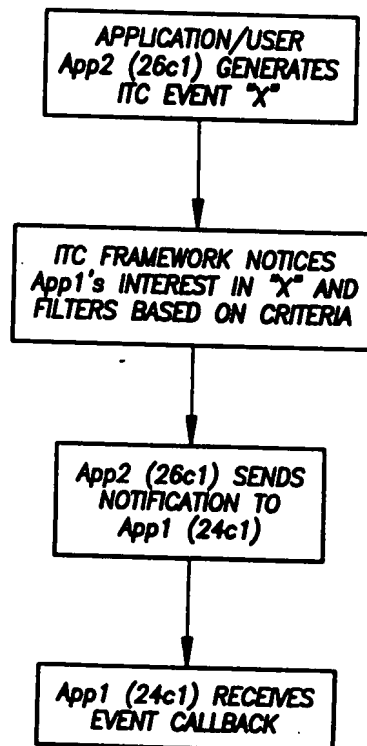


FIG.9B



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FIG. 10A

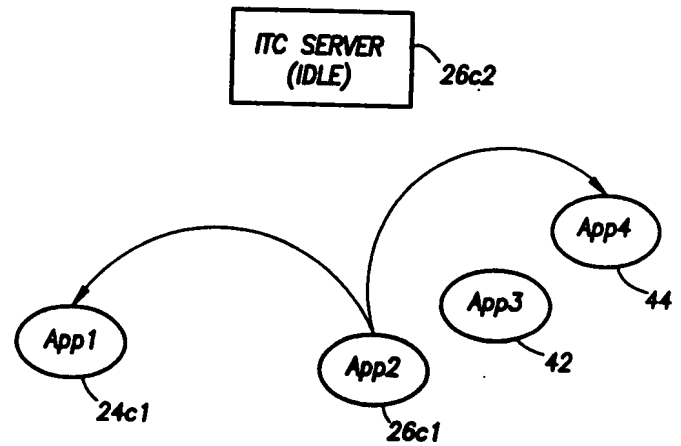


FIG. 10B

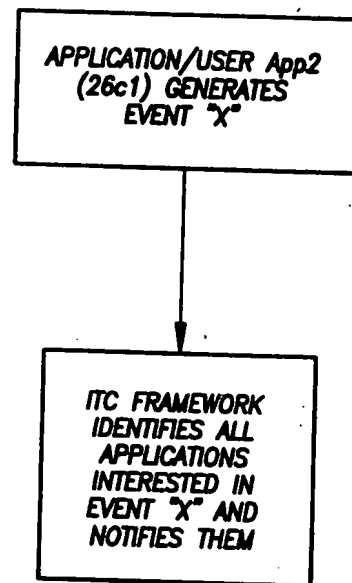


FIG. 11A

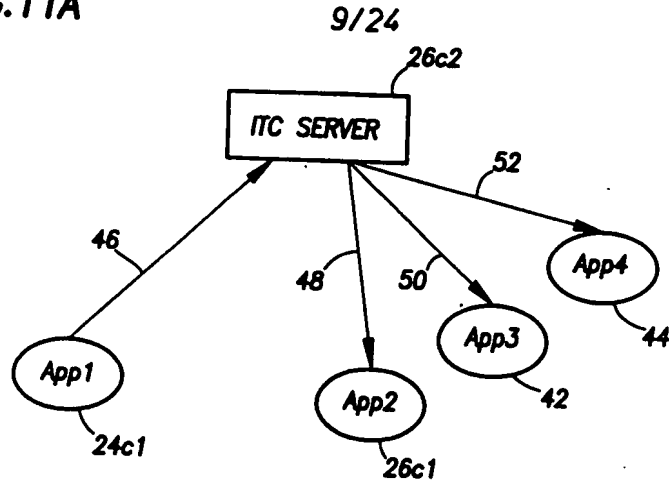


FIG. 11B

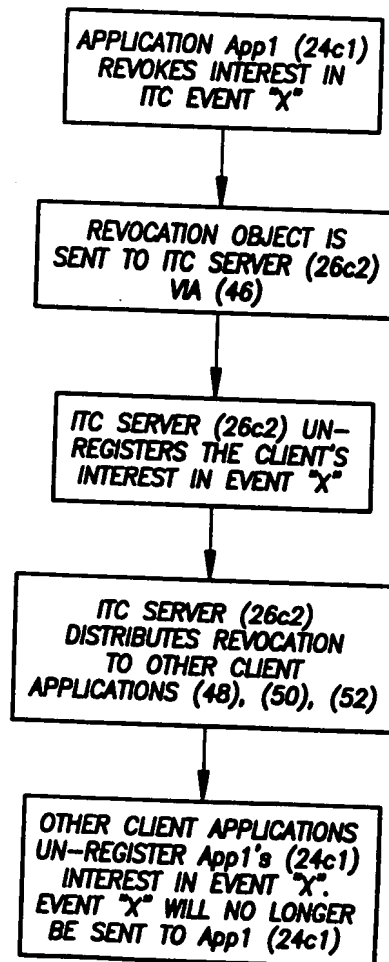


FIG. 12A

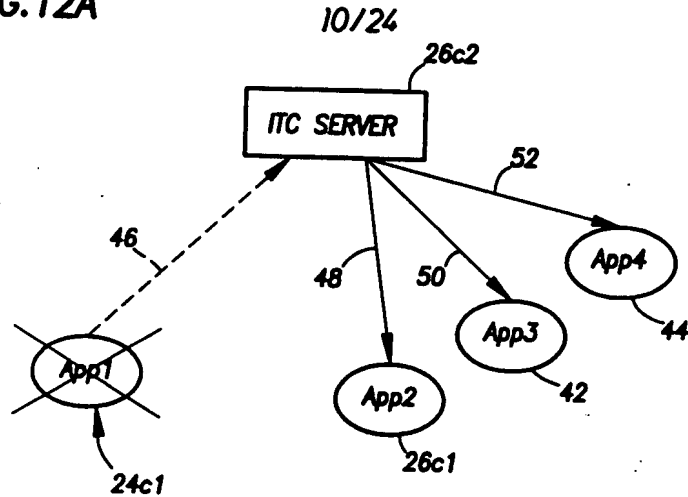
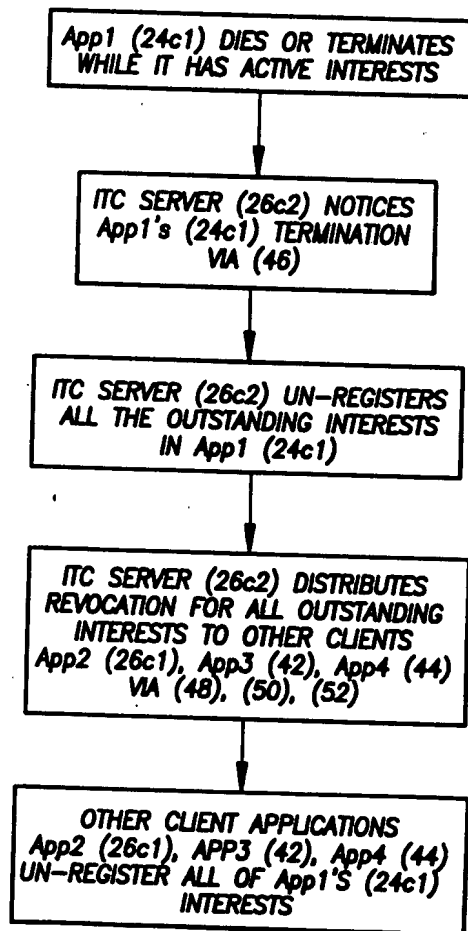


FIG. 12B



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FIG. 13A

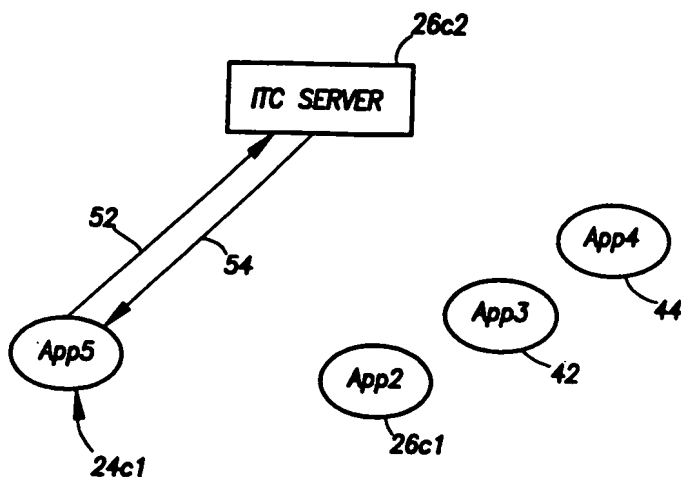


FIG. 13B

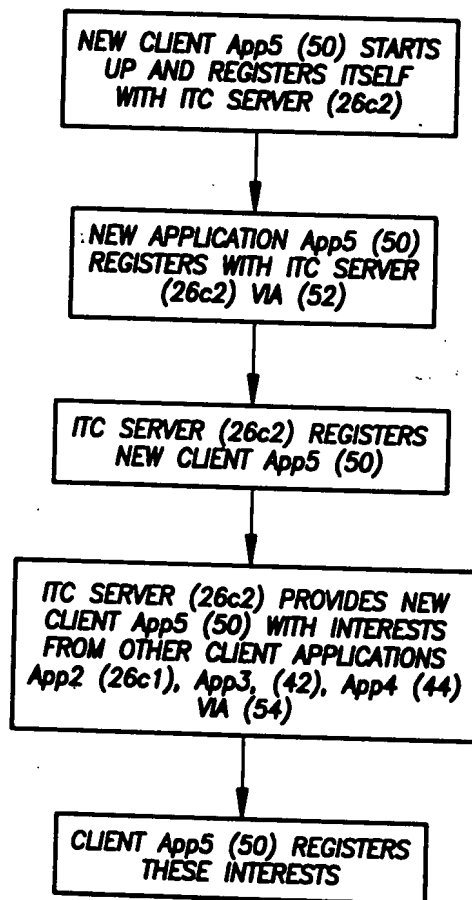


FIG. 13A

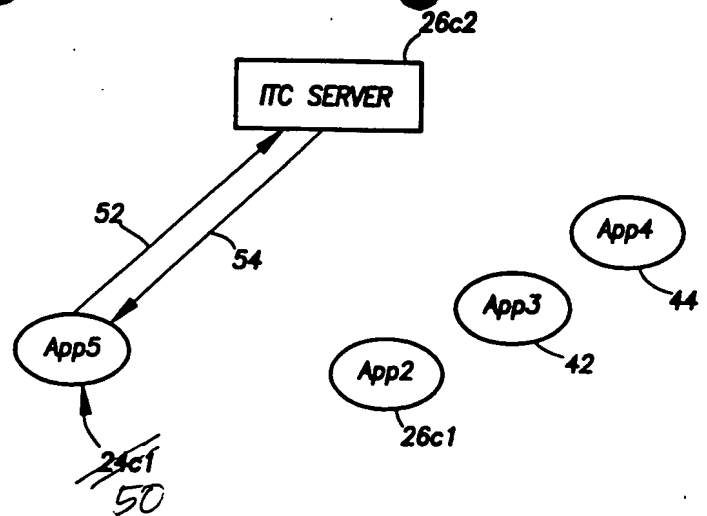
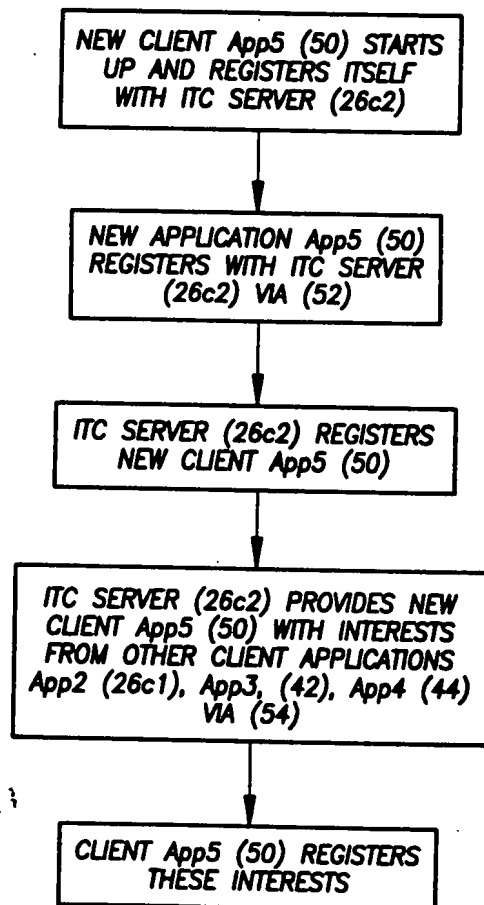


FIG. 13B



• EVENT FILTER 64



FIG. 15A

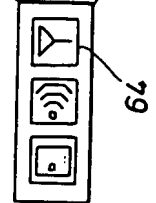


FIG. 15B

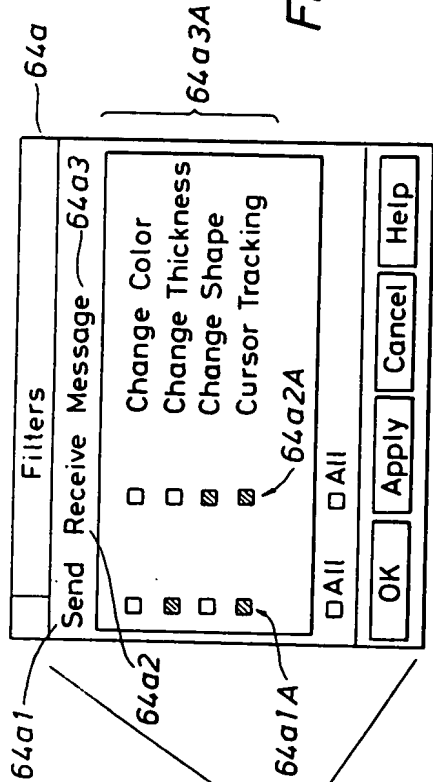


FIG. 15C

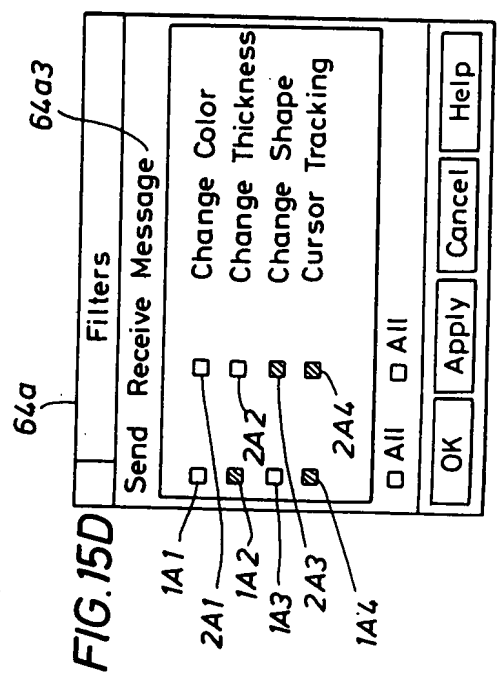


FIG. 15D

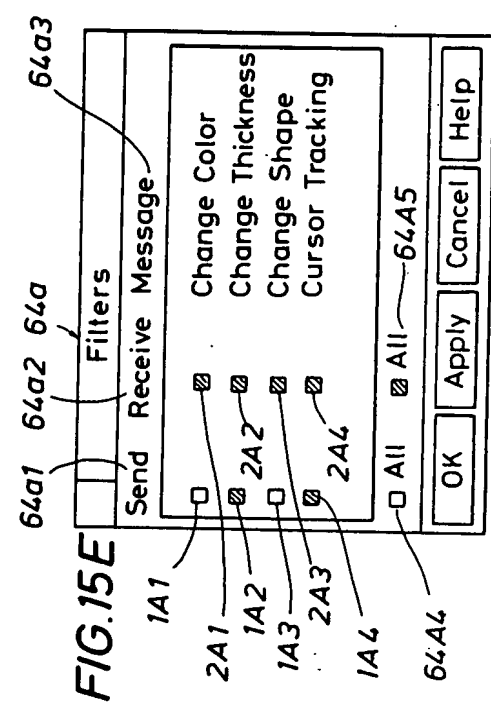
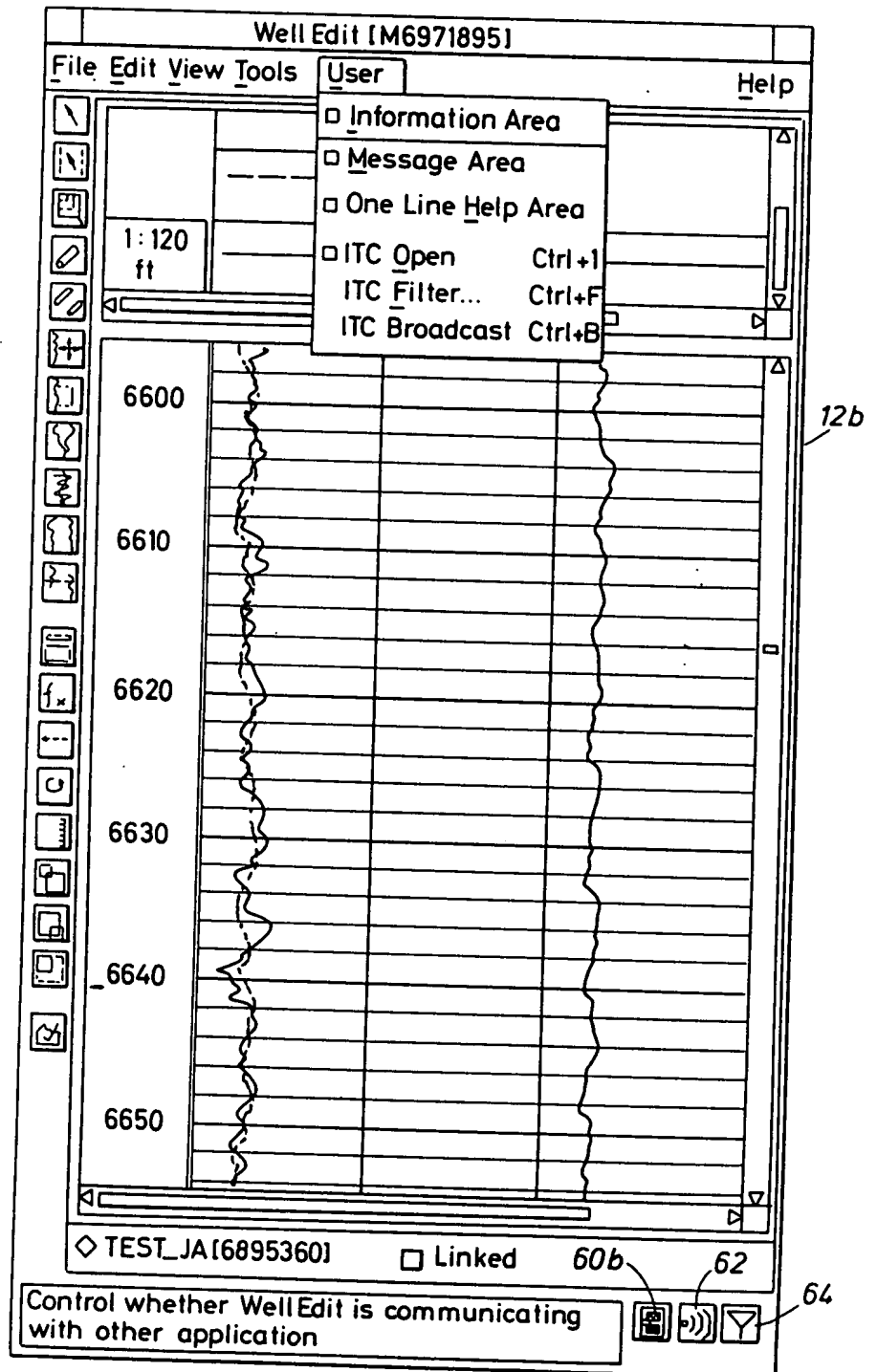


FIG. 15E

FIG. 16

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14/24

FIG. 17

12b

Array Selection

Query from Well Sketch [M2752679]

Array Code C*

☐ ☐ ☐ ☐ ☐

Code	Modifier	Start	Stop	Service	Run	Description
CALI	DITE	3949.5 ft	3900 ft	DITE	.011	Caliper
CCSW	DITE	3949.5 ft	3900 ft	DITE	.011	Composite CCS/CTS Telemetr.
CFTC	DITE	3949.5 ft	3900 ft	DITE	.011	Corrected Far Thermal Counts
CILD	DITE	3949.5 ft	3900 ft	DITE	.011	Calibrated Induction Deep...
CILM	DITE	3949.5 ft	3900 ft	DITE	.011	Calibrated Induction Medium
CNTC	DITE	3949.5 ft	3900 ft	DITE	.011	Corrected Near Thermal Counts
CS	DITE	3949.5 ft	3900 ft	DITE	.011	Cable Speed
CSFA	DITE	3949.5 ft	3900 ft	DITE	.011	SFL Conductivity (Averaged)
CSFL	DITE	3949.5 ft	3900 ft	DITE	.011	SFL Conductivity

Selection CILM.DITE .011 DITE [A2468008]

☐ ☐ ☐ ☐ ☐

☐ OK

☐ Cancel

☐ Help

☒ Open/Close ITC Connection

60b 62

55730 2000000

15/24

FIG. 18

12b

WellSketch Borehole Selection

Query from

Boreholes

UWI	Status	Driller Depth	Logger Depth
CASTILLA 9	active		
CASTILLA 9 @ WILDCAT			
NORTH TEXAS	proposed	4000 ft	3950 ft

Selection

☒ Broadcast current selection

FIG. 19

12b

60a 62

Collection Editor --- User Collection [C2534232]

Name

Code

Elements

Type	Element
P	WS_GPD_L_FILE [P2752715] wu_wellsketch / wellsketch
P	GPD_L_SUMMARY_DI [P2752717] # NULL
	NORTH_TEXAS [B2467872]
	Borehole_Equipment [2476970]
	WellSketch_widmer [Ac2752677]
	TENS.DITE __.011.DITE [A2467090]

Remarks

General Attribute Editor

☒ Pops up the Application Manager



FIG. 20

12b1

257 FEB 22 09:26:50

Well Editor -- BLANCO TEST WELL W2182127

72

Name BLANCO TEST WELL

Spud Date NULL

API NULL

Company NULL

UWI BLANCO TEST WELL

Region...

Surface Location

Projection tps [2124963]-Albers Equal-Area Conic

X(ft) NULL

Y(ft) NULL

Status

Well Status Absent

H2S Flag Absent

State/Country Code

State NULL

Country

Boreholes

BLANCO TEST WELL [B2182192]

Borehole [B2207544]

Create

Edit...

Delete...

Remarks

General Attribute Editor...

OK

Apply

Reset

Cancel

Help

Create a New Object in the DataBase

60a

62

FIG. 21

FIG. 22

18/24

12b3

Field Editor... JOE WAGNER [F2182126]

Name

Wells

Type	Name	UWI	Well Status
A	BLANCO TEST WELL	[W2182127]	BLANCO TEST WELL

Remarks

☒ Any type of remarks added to an entity instance

FIG. 23

12b4

60c

62

Attribute Editor

Name

Type

Attributes...

API Country Code	<input type="text" value="Well"/>
Create Date	<input type="text" value="Jul 29 14:24 1996"/>
Field Name	<input type="text" value="BLANCO TEST WELL"/>
Project	<input type="text" value="dm (Project)"/>
Source	<input type="text" value="DLIS_Load"/>
UWI	<input type="text" value="BLANCO TEST WELL"/>

☒ Save Changes in DataBase and Close the Window

FIG. 24

12b5

Field Editor...JOE WAGNER[F2182126]

Name

Wells

Type	Name	UWI	Well Status
	BLANCO TEST WELL [W2182127]		BLANCO TEST WELL

Remarks

OK

☒ Any type of remarks added to an entity instance

76

60c 62

FIG. 25

12b6

GeoFrame Application Manager

Schlumberger GeoQuest

Project Activity

Products

78

GEOLOGY

PETROPHYSICS

RESERVOIR

UTILIZATION

SEISMIC

UTILITY

Managers

78

PROJECT

PROCESS

DATA

Exit

View GeoFrame process messages

19/24

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FIG.26

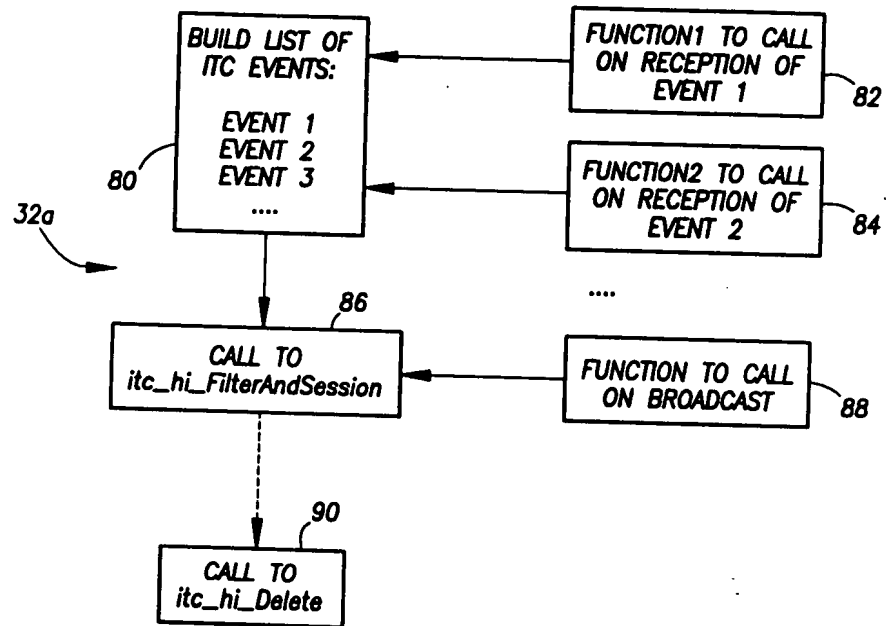


FIG.26A

BUILD LIST OF ITC EVENTS	
EVENT 1	INTEREST OBJECT 1
EVENT 2	INTEREST OBJECT 2
EVENT 3	INTEREST OBJECT 3
⋮	⋮
EVENT N	INTEREST OBJECT N

80a points to the first column (EVENT 1, EVENT 2, EVENT 3, ⋮, EVENT N).
80b points to the second column (INTEREST OBJECT 1, INTEREST OBJECT 2, INTEREST OBJECT 3, ⋮, INTEREST OBJECT N).
80 points to the entire table structure.

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FIG.27

```

#include <wk_itc_hi/itc_hi_public.h>
#include <wk_itc_hi/itc_hi_synonym.h>
#include <wk_itc_data/itc_diselection.h>
...
void
udm_SingleDIEditor::PopulateEventList(void)
{
    itc_hi_EventInfo_t Event;

    /* Initialize the filter info list */
    Event =
32a (itc_hi_EventInfo_t)utL_CallocBlock(sizeof(itc_hi_EventInfo_st));

    Event->EventToken      = qITC_DISELECTION;
    Event->EventHIName     = qDISELECTION;
    Event->SendToggleState = ITC_ON;
    Event->ReceiveToggleState = ITC_ON;
    Event->ReceiveEventCB = ReceiveDISelection_cb;
    Event->ReceiveEventCBData = (vt_Datum_t) this;

    EventList = (itc_hi_EventInfo_t)vt_CreateList(vt_Datum_t, 1);
    vt_AddToList((itc_hi_EventInfo_t)EventList, (vt_Datum_t)Event);
}

void
udm_SingleDIEditor::SetupITC(void)
{
    itc_Status_t MyStat;

    //Populate the eventlist
    PopulateEventList();

    //Set ITC HI for this SubModule Run
    ITCBanner = itc_hi_FilterAndSession(
        SubModuleRun,
        ITCForm,
        OneLineHelp,
        EventList,
        ITC_CLOSED,
        BroadcastDISelection_cb,
        (XtPointer) this,
        &MyStat);

    //Free Event List and elements

    itc_hi_EventInfo_t Event = (itc_hi_EventInfo_t) vt_Nth(EventList, 0);
    if(Event)
        utL_FreeBlock(Event);
    vt_DeleteList(EventList);
    EventList = NULL;
    ....
}

```

FIG.28

22/24

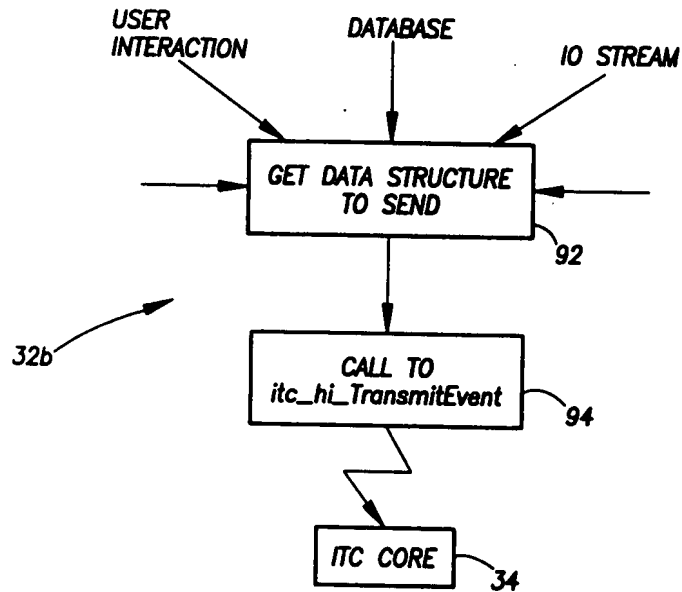


FIG.29

```

#include <wk_itc_hi/itc_hi_public.h>
...
void
udm_ObjectListInfo::SendSubDI(void)
{
    itc_Status_t ITCStat;
    aqi_DataItemL_t DlsToSend = GetSelection();
    itc_hi_t Banner = NULL;

    if (!DlsToSend)
        DlsToSend = (aqi_DataItemL_t)vt_CreateList(vt_DatumL_vt, 2);
    DlsToSend = (aqi_DataItemL_t)vt_AddToList((vt_DatumL_t)DlsToSend,
        (vt_Datum_t)DataItem);

    Banner = Manager->GetITCBanner();

    if (Banner && DlsToSend)
    {
        itc_hi_TransmitEvent(
            Banner,
            EventHName,
            (vt_Datum_t)DlsToSend,
            &ITCStat);
        vt_DeleteList(DlsToSend);
    }
}
  
```

The code block shows a C++ function `udm_ObjectListInfo::SendSubDI(void)`. It includes a header file, declares variables, and contains logic to handle data items and transmit events. A curved arrow labeled '32b' points to the `if (!DlsToSend)` line.

65730 2000000

FIG. 32

